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~~41.~~ (New) The coated nanocrystal of claim ²⁷~~36~~, wherein the second semiconductor material is ZnS or ZnSe.

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~~42.~~ (New) The coated nanocrystal of claim ⁷~~31~~ or ⁸~~32~~, wherein the diameter of the core is in the range of about 20Å to about 125 Å.--

Remarks

The Above Amendments

Claims 1 and 2 have been cancelled in favor of new independent claims 24 and 25. Cancellation of claims 1 and 2 is without prejudice, without intent to abandon any originally claimed subject matter, and without intent to acquiesce in any rejection of record. Applicants expressly reserve the right to file one or more continuing applications hereof containing these cancelled claims.

Claims 3-13 have been amended to more particularly recite the invention. In addition, new claims 24-42 have been added. Support for the amendments and the new claims can be found throughout the specification and claims as originally filed. In particular, support for independent claims 24 and 25 can be found in claims 1, 2, and 15, and on page 6, lines 19-21, and page 12, lines 22-25, of the specification. Support for claims 34 and 37 can be found on page 11, lines 13-15, of the specification. Support for amended claim 8 and new claims 33-37 can be found, for example, in claim 8 as originally filed, on page 12, lines 2-4, of the specification and in Figures 4 and 5.

No new matter has been added by way of these amendments or new claims.

Restriction Requirement

The Examiner has required restriction between two groups of claims:

Group I, claims 1-14, directed to a coated nanocrystal; and

Group II, claims 15-23, drawn to a method of preparing a coated nanocrystal.

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Applicants hereby affirm the provisional election, made May 4, 1999, to prosecute the claims of Group (I) without traverse.

Rejection under 35 U.S.C. §102(b)

Claims 1-14 were rejected under 35 U.S.C. §102(b) as anticipated by Kortan. In particular, the Examiner stated that:

Kortan et al. disclose the growing of ZnS on a CdSe forming [*sic*] a crystallite nanostructure. Because CdSe is a seed, its particle population is inherently monodisperse. Paper No. 7, page 3, paragraph 6.

Applicants disagree with this ground of rejection for the following reasons.

Kortan describes the synthesis of composite semiconductor crystallites involving CdSe grown on a ZnS seed, and vice versa. Kortan does not teach, suggest or disclose a monodisperse particle population or a method of preparing such a particle population. In fact, the method described in Kortan to prepare a CdSe or ZnS seed is that of Steigerwald *et al.* (1988) *J. Am. Chem. Soc.* 92:3046-3050 ("Steigerwald"; reference number 4 in Kortan), a copy of which is attached hereto.

Steigerwald describes the preparation of a seed having a 45 Å diameter with a 25% standard deviation (*see* page 3048, column 1). Thus, according to the definition of "monodisperse particles" on page 5, lines 29-30, of the specification, a seed prepared by the method described in Steigerwald, and thus by the method described in Kortan, is not monodisperse.

The claims are directed to a coated nanocrystal, the core of which is a member of a monodisperse particle population. "It is axiomatic that for prior art to anticipate under §102 it has to meet every element of the claimed invention...." *Hybritech Inc. v. Monoclonal Antibodies, Inc.* 231 U.S.P.Q. 81, 90 (Fed. Cir. 1986). Kortan does not teach a core that is a member of a monodisperse particle population and therefore cannot compromise the novelty of the claimed invention.

In addition, the seed prepared by Kortan is not "inherently" monodisperse. Inherency "may not be established by probabilities or possibilities.... The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *In re Oelrich*, 212 U.S.P.Q. 322, 326 (CCPA 1981). Furthermore, the "examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic *necessarily* flows from the teachings of the applied art." *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (BPAI 1990). The Examiner has not provided a basis in fact or technical reasoning for his statement and therefore has not met the standard articulated in *Levy*. Clearly, the teachings of Steigerwald indicate that a seed prepared by the method described therein, and thus prepared as described in Kortan, is not *necessarily* monodisperse. If the Examiner has facts within his knowledge to support his statement that the seed prepared in Kortan is monodisperse, he is requested to provide those facts in the form of an affidavit according to 37 C.F.R. §1.104(d)(2).

All of the pending claim depend either directly or indirectly from claim 24 or 25 and therefore require that the core be a member of a monodisperse particle population. Accordingly, Kortan does not contain every element of the claimed invention and does not anticipate the invention as claimed.

Reconsideration and withdrawal of this ground of rejection is respectfully requested.


Conclusion

Applicants respectfully submit that the claims define an invention that is patentable over the art. Accordingly, allowance is in order, and an early notification to that effect would be appreciated.

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